REMARKS

Claims 1-82 are pending in the application. Claims 1-82 have been rejected under the judicially-created doctrine of obviousness-type double patenting as being unpatentable over claims 1-64 of U.S. Patent No. 6,324,623. The Applicant wishes to place this rejection in abeyance until the claims are otherwise allowable.

In response to the objection to the specification, the specification has been amended to reflect the status of the application noted in the specification and to correct other errors of a typographical nature. The claims have been amended to correct the improper dependency noted in the Office Action.

Claims 1-82 have been rejected under 35 U.S.C. § 103 (a) as being deemed unpatentable over Potter et al. (U.S. Patent No. 5,924,093) and over Poulsen et al. (U.S. Patent No. 5,812,852). Before discussing the cited references however, a brief review of the Applicant's disclosure may be helpful.

A public memory structure is utilized to store data that is shareable between a plurality of users in a multi-threaded computing environment. A memory area on a server shared by a plurality of data accessors is used to store both public, shareable data and private, non-shareable data without having to negotiate ownership. Consequently, there are public and private pages stored in common memory. The private pages are those that are modifiable by a user and the public pages are those that are only readable, although by a plurality of users.

A particular method facilitates simultaneous analysis of data in multiple sessions in a computer. First, data is retrieved from storage into public blocks of a common memory space that is shared by a plurality of user sessions. These public blocks store data for global read-only access by a plurality of user sessions; that is, data in the public blocks is not modifiable by the user sessions. Second, public blocks of data are selectively copied into private blocks of the common memory space. Each private block stores data for private modification (read and write access) by a single user session.

Upon read access to a data item by a user session, the data item is read, if present, from a private block accessible by the user session. If the data item is not present in a private block accessible by the user session, the data item is read from a public block. Upon write access to a

data item by the user session, the data item is written to a private block, if present, accessible by the user session. If the private block is not already present, then data is copied from a public to a private block for access by the user session. Any modification to the private block by the user session is not communicated to the other user sessions. In other words, the claimed invention does not maintain a coherent cache.

Turning to the cited references, Potter discusses a method for performing a merge-sort function in a plurality of nodes interconnected by a network. Each of the nodes includes a plurality of microprocessors and a respective local memory. The sort function is performed in parallel in each of the nodes, with each node storing the results of its respective sort operation in its local buffer. One of the plurality of nodes is designated a coordinator node and the results of a sort operation performed in each of the other nodes are communicated over the network to the coordinator node. The coordinator node performs a merge-sort operation using the results forwarded from the other nodes and stores the final results of the merge-sort operation in its respective local memory. (*See* Potter, Col. 3, l. 59 - col. 4, l. 34; Fig.1, node 12, network 14; Col. 2, l. 21-31.)

In contrast to Potter the Applicant claims a memory that is shared by the data accessors. Potter discusses a plurality of nodes with each node having its own local private memory, which is modifiable only by the respective node. Each node modifies its local memory and a coordinator node having its own private memory merges the results received over the network from the other nodes. Potter does not teach or suggest storing data in a first memory block in a common memory system shared by a plurality of data accessors and "assigning a non-modifiable global view of the first memory block data to a first data accessor and a second data accessor." There is no discussion of a common system memory shared by the nodes or of assigning a non-modifiable global view of block data in the shared memory. Instead, each node has its own local, private-modifiable memory.

Poulsen discusses a modifiable global object accessible globally by a plurality of threads in a shared manner. The modifiable global object can be privatized by allocating N modifiable private copies of the global object, one for each of the N threads executing in a parallel computer

program. The modifiable global object can be modified by copying the data from one of the private copies to the global object (copy-out). (*See* Poulsen, Col. 6, l. 60 - col. 7, l. 21.)

In other words, Poulsen provides a global view of a modifiable global object, which can be assigned to a single thread (the serial thread), and private copies of the modifiable global object, which are assigned to other threads. Thus, Poulsen does not suggest the need for assigning a non-modifiable global view of the first memory block to a first data accessor and a second data accessor, or the need for copying the data from the first memory block to a second memory block **in response to a request by the second accessor to modify the first memory block**.

Poulsen also does not suggest the need for copying the data from the non-modifiable public view into modifiable private blocks for write access. (Claims 17, 43; *See also* Claim 42). Nor does Poulsen suggest communicating modifications to the first data accessor and retrieving data from storage into non-modifiable public blocks. (Claims 14, 63; *see also* Claim 39).

In contrast to the cited references, the Applicant claims (in Claims 1, 14, 21, 39, 51, 63 and 75) a system that assigns a non-modifiable global view of a first memory block to a first and second data accessor in the computer. **In response to a request from the second data accessor to modify the non-modifiable global view of the first memory block**, the data stored in the first memory block is copied to a second memory block and a modifiable private view of a second memory block is assigned to the second data accessor. (*See* Specification, Page 9, lines 9-13.) As claimed, a single non-modifiable global view of data is provided to a plurality of data accessors for global read-only access. A private, modifiable view of the data, for private modification (read and write access) by a single user session, is assigned to a data accessor in response to a request from the data accessor to modify the data.

Furthermore, the Applicant submits that Potter and Poulsen are not properly combinable. Potter's global data structure on a coordinator node stores ordered entries associated with the results stored in local memory in the other nodes. There is no sharing of results between nodes, for example from node B to node D. (*See* Fig. 1) Potter therefore would not motivate one of ordinary skill in the art to add a private view of the global data structure, because each local node stores its own node local data in a private local buffer. Without that motivation, one of ordinary

skill would not have combined Potter and Poulsen. Any such combination would be with the aid of hindsight using the Applicant's teachings.

Even in combination, Potter and Poulsen do not suggest the Applicant's claimed invention. For example, the Applicant respectively disagrees with the Office Action's suggestion that one with ordinary skill in the art would know that data in a private area assigned to a single accessor is not shared. Poulsen's teachings are contrary to that suggestion. Even though the private areas discussed by Poulsen are not shared, the **data** stored in the respective private areas can be shared with the other data accessors by communicating modifications made to the private areas to a global area. Thus, in combination, Potter and Poulsen actually teach away from the Applicant's claimed invention, as recited in Claims 1, 28, and 51.

Patentably distinguishing claim language of independent Claims 1 and 51 reads, in pertinent part:

> assigning a non-modifiable global view of the first memory block data to a first data accessor and a second data accessor in the computer;
>
> in response to a request by the second data accessor to modify the first memory block, copying the data from the first memory block to a second memory block without regard to the existence of the data in any other memory block; and
>
> assigning a modifiable private view of the second memory block data to the second data accessor in the computer so that a modification to the second memory block data by the second data accessor is not communicated to the first data accessor.

(*See also* Independent Claim 28.)

In addition, patentably distinguishable claim language of independent Claims 14 and 63 reads, in pertinent part:

> . . . public blocks storing data therein for global read-only access by a plurality of user accessors;
>
> in response to receiving requests from user accessors to modify public blocks, copying . . . without regard to the existence of the data by any other memory blocks;
>
> . . . upon write access to the data item by the user accessor, writing the data item to a private block without communicating any modification to the private block to another user accessor.

(*See also* Independent Claim 39.)

The allowance of dependent claims follow from the base claims. Claims 2-13 are dependent on Claim 1; Claims 15-27 are dependent on Claim 14; Claims 29-38 are dependent on Claim 28; Claims 40-50 are dependent on Claim 39; Claims 52-62 are dependent on Claim 51; Claims 38-43, 48, and 79-82 are dependent on Claim 37; Claims 63-74 are dependent on Claim 63, and Claims 76-82 are dependent on Claim 75 respectively and thus include this limitation over the prior art. Accordingly, the present invention as now claimed is not suggested by the cited art. Reconsideration of the rejections under 35 U.S.C. §103 (a) is respectively requested.

CONCLUSION

In view of the above amendments and remarks, it is believed that all claims (claims 1-82) are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned attorney at (978) 341-0036.

Respectfully submitted,

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

By Caroline M Fleming

Caroline M. Fleming
Registration No. 45,566
Telephone: (978) 341-0036
Facsimile: (978) 341-0136

Concord, MA 01742-9133
Dated: 2/27/04